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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,524	07/03/2003	Cem Basceri	MICRON.098CDV2	8174
20995	7590	12/23/2004	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			BREWSTER, WILLIAM M	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			2823	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,524

Applicant(s)

BASCERI ET AL.

Examiner

William M. Brewster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakubo et al., US Patent No. 5,739,563 in view of Kawahara et al., U.S. Patent No. 5,989,635.

Kawakubo teaches a method for forming a substantially haze-free BST film, comprising: in figs. 9A-9E, supplying BST sources into a chamber, part of the sputtering process; and depositing a BST film 116 at a chamber temperature above 600°C, col. 20, lines 45-59, and at a rate until a BST film having a substantially uniform crystal orientation along planes in the {100} family, col. 21, lines 26-45, and a thickness of about 150 to 300 Å is formed, col. 13, lines 43-55;

limitations from claim 3, wherein the chamber is heated to a temperature of up to about 680° C, col. 20, lines 45-49;

limitations from claims 5, 12, the method, further comprising, in fig. 9D, depositing and forming a first electrode 113 below and before the BST film is

deposited, and, in fig. 9E, forming a second electrode 115 above the BST film, col. 20, lines 33-64.

Kawakubo does not specify any deposition rate leaving the practitioner to optimize the rate, however Kawahara suggests a reasonable rate. Kawahara teaches a method for forming a substantially haze-free BST film, comprising: in fig. 1, supplying BST sources into a chamber, from liquid source 44, vaporizing chamber, 50, col. 2, lines 30-49; heating the chamber to a temperature above about 600° C: 400 to 600° C, col. 2, lines 30-49; and depositing the BST film at a rate of between about 10 and about 100 Å/min: 30 Å/min, col. 2, line 66 - col. 3, line 11;

limitations from claim 2, wherein the BST film is deposited at a rate of less than about 80 Å /min: 30 Å/min, col. 2, line 66 - col. 3, line 11;

limitations from claims 4, 6, 13, wherein the substrate is heated to a temperature of about 500 to 580° C; heating the substrate to a temperature of about 500 to 550° C before depositing said electrode material: wherein the reaction chamber is heated at 400 to 600° C, and the substrate is heated by being within the reaction chamber, col. 2, lines 30-49;

limitations from claims 5, 12: the method further comprising: in fig. 4, depositing an electrode material 35 before depositing said BST film 34, and depositing a second electrode, 33, above the BST film col. 4, lines 32-65;

limitations from claims 7, 8, 14, 15: the method wherein the resulting BST film

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comprises about 50 to 53.5 atomic percent titanium, further comprises about 52 to 53 atomic percent titanium: wherein the ratio of $(Ba + Sr)/Ti = 1.0$, col. 2, line 66 - col. 3, line 11;

limitations from claim 10: the method of depositing BST film until a BST film having a thickness of about 150 to 300 Å is formed, col. 2, line 66 - col. 3, line 11.

Kawahara gives motivation on col. 3, lines 18-21. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that implementing Kawahara's deposition rate with Kawakubo's invention would have been beneficial because it is within a standard known rate capable of being performed by the processing tools, and thus is already known to the practitioner.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakubo in view of Kawahara as applied to claims 1-10, 12-15 above, and further in view of Tarutani et al., U.S. Patent No. 6,179,920 B1.

Kawahara does not specify a deposition rate of 80 Å/min, but Tarutani does. Tarutani teaches in fig. 4, forming a substrate 6 and depositing a BST film at a rate of 50-90 Å/min, col. 9, lines 36-50. Tarutani gives motivation in col. 9, lines 36-50. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Tarutani's process with Kawahara's invention would have been beneficial because the invention generates lower residue necessitating less cleaning of the apparatus.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection. Kawakubo teaches deposition at the temperatures required of the amended claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

16 December 2004
WB


OLIK CHAUDHURI
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